

REMARKS

Careful consideration has been given by the applicants to the Examiner's comments and rejection of the claims, as set forth in the outstanding Office Action, and favorable reconsideration of the application and claims, as amended herein, is earnestly solicited.

Applicants note the Examiner's rejection of Claims 1-4 under 35 U.S.C. §112, second paragraph, as being indefinite, as detailed in Paragraph 2 of the Office Action.

Accordingly, Claim 1 has been amended in formal respects to incorporate appropriate and clear terminology, so as to render the Examiner's rejection to be moot.

In particular, the claim is directed to a single braking element, which, in essence, relates to the textile screen, which fully and in a gapless manner encompasses or surrounds the peripheral extent of the spin-stabilized artillery projectile.

Accordingly, in Line 1 of Claim 1, this terminology has been amended to indicate an essentially single braking element.

With regard to the Examiner's objections to the term "without a gap", this has been amended to indicate that the braking element extends peripherally gaplessly in a circumferential direction upon deployment in the form of a continuous, essentially surfaced textile screen. This terminology is clearly set forth in the specification, wherein it relates to the term "gapless surrounding braking element" and also in the original claim and text of the German priority application.

Furthermore, with regard to the objection to the term "a textile screen 16, which by virtue of its outside periphery 32 thereof, is reduced with respect to its radius", this terminology has also been clarified in view of the disclosure on Page 4, Lines 25-29 of the present specification and in

view of Figures 1 and 2.

In particular, applicants note that with respect to the foregoing, the outside periphery of the screen 16, inasmuch as in its deployed operative position it, is essentially frusto-conical, is less than would be the circumference of a corresponding circle based on the radius of the textile screen when fully or horizontally or planarly extended. Consequently, the radius expands in a circumferential direction of a full cone is a straight line from the peak of the cone to a point on the outside periphery of the base plane of the cone, which, in essence, is shorter than the radius of the screen material if expanded in a horizontal plane.

With regard to the term “flat obtuse-angle frusto-conical shape”, although this would appear to be clear in its meaning, applicants have eliminated the term “flat”, which is only intended to indicate that the obtuse-angled state is of an extremely high conicity, in effect, the cone angle is close to 180° . However, even in the elimination of the term “flat”, the definition would be considered clear, as set forth in the claims and as described herein.

With regard to the term “a smaller base”, this term has been defined as the leading end of the textile screen, which when deployed in an obtuse-conical angle, is the forward or smaller diameter part of the frusto-conical configuration. Consequently, this has also been defined that the smaller base of the frusto-conical shape faces forwardly in the direction of projectile flight.

In view of the foregoing amendments, the formal grounds of rejection have been fully met by applicants. However, in the event that the Examiner has any queries in that regard, applicants request that this possibly be clarified and discussed in a telephone conference.

Reverting to the prior art, with regard to the claim rejection under 35 U.S.C. §102(e), in that Claims 1-4 are anticipated by Applicants' own earlier Bär, et al. U.S. Patent No. 6,672,536 B2; and the rejection of Claims 1 and 2, which have also been rejected as being anticipated by Applicants' earlier Bär, et al. U.S. Patent No. 6,511,016 B2, applicants respectfully submit that the claims and disclosure clearly and patentably distinguish over these particular publications.

Traversing the rejection of Claims 1-4 by Applicants' earlier U.S. Patent No. 6,511,016 B2 (hereinafter Bär, et al. '016), applicants note that the present invention clearly and patentably distinguishes thereover, as further discussed hereinbelow.

Thus, Bär, et al. '016 discloses, in a broad sense, the generic feature of a spin-stabilized projectile with a braking device for shortening the ballistic trajectory. However, the braking device according to Bär, et al. '016 is constituted of flap-shaped sectors 24, which are extendable from the conical surface of the fuse 13, thereby producing a gapped structure possessing a spoke-like configuration with large open interspaces 32. As can be ascertained from Figure 3 of Bär, et al. '016, in connection with a corresponding description in Bär, et al. '016, ascertained are the gap sectors or space 32 between the flap sectors 24 may be bridged by flexible bridging portions 33 made of textile fabric, the edges of which are fixed to the flap sectors 24.

However, that type of ring configuration consisting of alternately arranged inflexible flaps 24 and flexible-bridging portions 33 does not represent a gapless peripherally extending braking screen within the context of the present invention. Since Bär, et al. '016 necessarily requires this structure arrangement with the inclusion of inflexible flaps; there does not exist any suggestion of providing a gapless peripherally extending textile ring in Bär, et al. '016, as is employed, as disclosed and claimed in the present application.

It is of importance to note that for the practical application of a braking device, which peripherally extends in the form of a full and gapless textile screen, that this textile screen is radially deployed from a folded stowing position into an outwardly deployed braking position in a particular and specifically mandated manner. Only then may there be reliably avoided any destabilized flight conditions of the projectile in connection with the deployment of the screen. However, encountered may be the danger of such instabilities in case that the braking screens were to be arranged solely in the form of a flat annular textile material disc. In such an instance, notwithstanding the forces of the airflow resistance, the flat annular disc would deploy vertically towards the axis of the projectile as a consequence of encountered extremely high centrifugal forces, which are on the screen. In such an orientation of the textile screen perpendicular to the longitudinal axis of the projectile, the textile screen would be formed to be in an aerodynamically destabilized position.

Pursuant to the present invention, there is provided the unique advantage that the flexible textile screen 16 is deployable only into an obtuse-angled frusto-conical shape, although this may be almost but not quite flat. This advantage is achieved by the novel feature that the external periphery 32 of the frusto-conical textile screen 16 is smaller with respect to its radius if extended planarly. In an exemplary embodiment of the invention, this novel feature is described on Page 4, Lines 25-29 of the present invention. Accordingly, notwithstanding the high centrifugal forces acting on the extended textile screen, the textile screen will not deploy into the vertical or normal plane relative to the longitudinal axis of the projectile, but will deploy into a specified, aerodynamically advantageous frusto-conical configuration.

Since Bär, et al. '016 do not describe a peripherally gapless extending textile fabric, even a person skilled in the art cannot find any suggestion of the inventive textile braking ring possessing a frusto-conical shape. Especially focusing on the disclosure and Figure 3 of Bär, et al. '016, there is nothing contained in this application relative to the width of the flexible bridging portions 33 bridging the gaps 32 between the inflexible flap sectors 24. The only function, which is described in Bär, et al. '016 with respect to the bridging portions 33, is "to close the openings 32 formed by those gaps in order to enhance the braking action". This signifies that the bridging portions 33 are only provided to cover the gaps in the spoke-like configuration of Figure 3 in Bär, et al. '016 in order to increase the airflow resistance of the projectile.

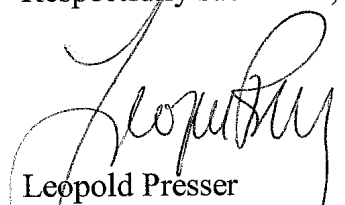
However, there cannot be ascertained from Bär, et al. '016 that these flexible bridging portions 33 should be cut so narrow such that the inflexible flap sectors 24 are prevented by these flexible bridging portions 33 from deploying wider than a frusto-conical shape, i.e. planarly.

With regard to the foregoing, the above arguments submitted by applicants are also applicable to Bär, et al., the second U.S. Patent No. 6,672,536 B2 (hereinafter to Bär, et al. '536), wherein the braking elements 16 shown in that patent are deployed radially under the action of centrifugal force, as described in Column 2, Lines 8-10; Column 3, Lines 26-29; Column 4, Lines 4-6; and Column 4, Lines 26-29. However, there is no disclosure in Bär, et al. '536, that these braking elements 16 are prevented from deploying wider planarly than a frusto-conical configuration. To the contrary, the braking elements are in a freely swingable condition, as described in Column 3, Line 61, which also enables the braking elements 16 to assume an operative position perpendicular or normal to the longitudinal axis 17 of the projectile of Bär, et al. '536.

Pursuant to the present invention, this provides the advantage that the flexible textile screen 17, which forms a single braking element, is deployable only into an obtuse-angled frusto-conical shape, although this may be somewhat flat in approaching but not reaching 180°. This particular advantage is attained by the feature that the measured outside periphery 32 of the textile screen is narrower than the radius of the material, due to the fact that in the deployed state, this textile screen is only in a frusto-conical configuration, rather than deployed into a completely radial extension.

In view of the foregoing comments and amendments, applicants respectfully submit that the claims clearly and unambiguously distinguish over the art, irrespective as to whether the latter is considered singly or in combination, and are directed to clearly allowable features for which the patent should be granted. However, in the event that the Examiner has any queries concerning the instantly submitted Amendment, applicants' attorney respectfully requests that he be accorded the courtesy of possibly a telephone conference to discuss any matters in need of attention.

Respectfully submitted,



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